



Patent Application 10/672,759 of Neil Alex Korneff for "On-Demand Ejection for Injection Molds"
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Appn. Number: 10/672,759
Appn. Filed: 2003 Sept. 27
Applicant: Neil Alex Korneff
Title: On-Demand Ejection for Injection Molds
Examiner: Len Tran
Art Unit: 1725

Date Mailed: 03/26/05

Appeal Brief

Board of Patent Appeals and Interference

US Patent and Trademark Office, Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Applicant urges the examiner to take care in distinguishing between the terms "injection" and "ejection" when considering this appeal.

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(1) Real Party in Interest

Neil Alex Korneff

(2) Related Appeals and Interferences

None

(3) Status of Claims

Claims 1-4 and 15-24 have a status of final rejection

Claims 5-14 are canceled

(4) Status of Amendments

No amendments filed subsequent to final rejection

(5) Summary of Invention

This invention provides a method of performing ejection sequences in an injection mold on demand, increasing production efficiency and protecting the mold (summary). The presence or absence of a molded article, or portion thereof 30, in said injection mold is detected by, and not limited to, an article sensing vision system 14 and/or radiation emitting and receiving sensors 16, 18, 20 (detailed description, 1st paragraph).

If said molded article, or portion thereof 30, is not detected in said mold, the mold is allowed to close and initiate the next injection molding cycle (operation, 1st paragraph).

If said molded articles, or portions thereof 30, are detected in said mold, an ejection sequence is initiated to try and automatically remove the part from the mold (operation, 1st paragraph). Subsequent inspections and ejections are performed in an attempt to remove said part, or portion thereof 30, automatically from said mold. If a predetermined number of ejection sequences are reached and said molded article, or portion thereof 30, is still detected in said mold, the molding machine controller 26 will signal for operator intervention (operation, 1st paragraph).

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This invention offers advantages over prior art. Utilizing this method will increase production efficiency since only the required amount of ejection sequences will be utilized in any molding cycle (operation, 2nd paragraph, sentence "a"). Prior art requires a conservative amount of ejection sequences to be utilized on every molding cycle to help prevent mold operator-intervention alarms and/or mold damage. A reduction in operator intervention will be realized since the system will attempt to self-correct improperly ejected articles, or portions thereof 30 (operation, 2nd paragraph, sentence "d"). The mold will have increased protection from damage caused by closing on an improperly ejected article, or portion thereof 30 (operation, 2nd paragraph, sentence "b"). Molded articles made immediately after a significant delay in production have questionable quality. Such significant delays will be reduced since this method does not stop the molding machine until multiple additional ejection sequences have been tried to automatically correct the problem (operation, 2nd paragraph, sentence "c").

(6) Issues

- Claims 1-7, 9, 10, 12, 15, 17-19, and 22 stand rejected under 35 U.S.C § 102(b) as being anticipated by Bangerter et al (US 4,603,329)
- Claims 1-4 stand rejected under 35 U.S.C § 102(b) as being anticipated by Lausenhammer et al (US 6,315,543)
- Claims 16, 20, 21, 23, and 24 stand rejected under 35 U.S.C § 103(a) as being unpatentable over Buckley (US 6,427,755) further in view of Lausenhammer et al (US 6,315,543) or Bangerter et al (US 4,603,329)

(7) Grouping of Claims

The sole independent claim under appeal is Claim 1. All claims stand and fall together based on Claim 1.

(8) Argument

Rejection under 35 U.S.C § 102(b) as being anticipated by Bangerter et al

The sole independent claim under appeal is Claim 1, which reads as follows:

A method of performing additional ejection sequences in an injection mold on demand comprising the steps of:

- a. Detecting the presence of a molded article, or portion thereof, in the injection mold
- b. Initiating the next molding cycle if the said molded article, or portion thereof, is not detected in the said mold
- c. Activating an ejection sequence if said molded article, or portion thereof, is detected in said mold

Bangerter discusses that it is imperative that all newly formed parts be completely removed from the molds or dies before the molds close, and the next cycle in the parts forming operation begins (col. 1, lines 12-15, lines 25-33, col. 11, lines 22-61). Bangerter discloses that if a part is stuck in the mold or die, an appropriate stop signal is sent to the parts forming apparatus (col. 2, lines 9-10) so as not to proceed with the next step of the parts forming cycle (col. 3, line 47 – col. 4, line 4, col. 12, lines 15-19). Bangerter does not disclose the method of activating an ejection sequence if said molded article, or portion thereof, is detected in said mold. Applicant submits that claims are allowable under 35 U.S.C. 35 U.S.C § 102(b) since they are not anticipated by Bangerter et al (US 4,603,329) and solicits reconsideration and allowance.

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Rejection under 35 U.S.C § 102(b) as being anticipated by Lausenhammer et al

The sole independent claim under appeal is Claim 1, which reads as follows:

- A method of performing additional ejection sequences in an injection mold on demand comprising the steps of:
- a. Detecting the presence of a molded article, or portion thereof, in the injection mold
 - b. Initiating the next molding cycle if the said molded article, or portion thereof, is not detected in the said mold
 - c. Activating an ejection sequence if said molded article, or portion thereof, is detected in said mold

Lausenhammer discloses that if an article remains on a machine core pin after the article ejection cycle has occurred, the machine is prevented from starting a new injection cycle and damaging the injection mold (abstract, col. 1, lines 42-45, col. 2, lines 12-18).

Lausenhammer also discloses that movement of the take-out plate is also prevented when an article remains on a core pin (col. 5, lines 27-30). Lausenhammer does not disclose the method of activating an ejection sequence if said molded article, or portion thereof, is detected in said mold. Applicant submits that the claims are allowable under 35 U.S.C. § 102(b) since they are not anticipated by Lausenhammer et al (US 6,315,543) and solicits reconsideration and allowance.

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Rejection under 35 U.S.C § 103(a) as being unpatentable over Buckley further in view of Lausenhammer et al or Bangerter et al

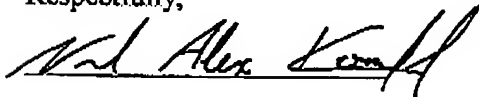
The sole independent claim under appeal is Claim 1, which reads as follows:

A method of performing additional ejection sequences in an injection mold on demand comprising the steps of:

- a. Detecting the presence of a molded article, or portion thereof, in the injection mold
- b. Initiating the next molding cycle if the said molded article, or portion thereof, is not detected in the said mold
- c. Activating an ejection sequence if said molded article, or portion thereof, is detected in said mold

Buckley, Lausenhammer, and Bangerter do not disclose the method of activating an ejection sequence if said molded article, or portion thereof, is detected in said mold. This method is not disclosed or suggested by the claimed subject matter, and offers a significant advantage over prior art by trying to self-correct and eject a molded article, or portion thereof, that has not ejected from the mold. Prior art simply causes the machine to alarm, requiring operator intervention, reducing production efficiency, and introducing the possibility for production defects such as degraded material. Applicant contends that that the claims are allowable under 35 U.S.C. § 103(a) since Buckley, Lausenhammer, and Bangerter do not disclose or suggest the method of activating an ejection sequence if said molded article, or portion thereof, is detected in said mold.

Respectfully,



3/26/05

Neil Alex Korneff
21428 Bella Pine Drive
Diamond Bar, CA 91765
Tel: 909-861-1213

(9) Appendix (Claims)

1. (original): A method of performing additional ejection sequences in an injection mold on demand comprising the steps of:
 - a. Detecting the presence of a molded article, or portion thereof, in the injection mold
 - b. Initiating the next molding cycle if the said molded article, or portion thereof, is not detected in the said mold
 - c. Activating an ejection sequence if said molded article, or portion thereof, is detected in said mold
2. (original): The method of detecting the presence of said molded article, or portion thereof, of Claim 1 is accomplished with a vision-system
3. (original): The method of detecting the presence of said molded article, or portion thereof, of Claim 1 is accomplished with one or more radiation emitting and receiving sensors
4. (original): The method of detecting the presence of said molded article, or portion thereof, of Claim 1 detects the presence of said molded article, or portion thereof, in said injection mold and portions of the mold which are not in position prior to initiating said next cycle
- 5 – 14 (canceled)
15. (previously presented): The method of Claim 1, where said article, or portion thereof, is the molded part
16. (previously presented): The method of Claim 1, where said article, or portion thereof, is a byproduct of molding the part

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17. (previously presented): The method of Claim 1, where said ejection sequences are mechanical sequences
18. (previously presented): The method of Claim 1, where said ejection sequences are pneumatic sequences
19. (previously presented): The method of Claim 1, where said injection mold is a plastic-injection mold
20. (previously presented): The method of Claim 1, where said injection mold is a metal-injection mold
21. (previously presented): The method of Claim 1, where said injection mold is a silicone-injection mold
22. (previously presented): The method of Claim 1, where said molded article, or portion thereof, is a plastic-injection molded article, or portion thereof
23. (previously presented): The method of Claim 1, where said molded article, or portion thereof, is a metal-injection molded article, or portion thereof
24. (previously presented): The method of Claim 1, where said molded article, or portion thereof, is a silicone-injection molded article, or portion thereof